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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,605	03/28/2001	Daisuke Kotake	2355.12119	1877
5514	7590	08/15/2005	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			EDWARDS, PATRICK L	
			ART UNIT	PAPER NUMBER
			2621	

DATE MAILED: 08/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/818,605

Applicant(s)

KOTAKE ET AL

Examiner

Patrick L. Edwards

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4,5,12,15,16 and 23-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,12,15,16 and 23-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 18 October 2004.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

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### DETAILED ACTION

1. The response received on 18 May 2005 has been placed in the file and was considered by the examiner. An action on the merits follows.

#### *Response to Arguments*

2. The arguments filed on 18 May 2005 have been fully considered. A response to these arguments is provided below.

### 35 USC 101 Rejections

#### Summary of Argument:

Claims 23 and 27 were rejected in the previous office action as being directed to non-statutory subject matter. Applicant's have amended these claims in accordance with the examiner's suggestion.

#### Examiner's Response:

The previous rejections are hereby withdrawn.

### Prior Art Rejections

#### Summary of Argument:

1. Regarding independent claims 1, 12, 23, and 24, applicants allege that the combination of Laumeyer and Hsu fails to teach, disclose, or suggest "extracting successive frame data whose position data nearly matches from plural pieces of frame data held by a holding means, deleting all frame data of the extracted successive frame data except for one frame data, and associating the frame data that has not been deleted by the deletion means with a position on a map based on a position data of the frame data." (remarks, pg. 12).

2. Regarding independent claims 25-28, applicants allege that the combination of Laumeyer and Hsu fails to teach, disclose, or suggest "extracting frame data from plural pieces of frame data held by holding means, that is determined to have been captured at the same position, deleting frame data overlapping another piece of extracted frame data, and storing, after associating with a position on a map, non-deleted frame data." (remarks, pg. 12-13).

#### Examiner's Response:

1. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

2. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 5, 12, 16, and 23-28 are rejected under 35 U.S.C. 103(a) as being anticipated by the combination of Laumeyer et al. (USPN 6,266,442 B1) and Hsu et al. (USPN 6,512,857).

With regard to claim 12, Laumeyer discloses holding plural pieces of frame data which constitute a moving image captured using a capture device mounted on a moving object (Laumeyer col. 11 lines 16-37: the reference discloses a frame buffer for holding frame data from the 'video capture' device mounted on a moving object. By definition, the video capture device captures plural pieces of frame data which constitute a moving image).

Laumeyer further discloses that this frame data is associated with a capture position, which is based on GPS (col. 5 lines 45-54 & col. 10 lines 34-39)

Laumeyer further discloses extracting successive frame data, whose position data nearly matches, from the plural pieces of frame data held by the holding means (see laumeyer col. 18 lines 25-29: the reference describes extracting the successive frame data (which is held in the frame buffer) whose position data nearly matches (the frames correspond to the same camera location coordinates (this is also clearly shown in figure 4, where it states that the frames are correlated by location))). This 'receiving' step from laumeyer corresponds to the claimed extraction step.

Laumeyer further discloses deleting all of the extracted frame data except for one frame (laumeyer col. 18 lines 35-42: the reference describes saving one of the extracted image frames (ie deleting all of the extracted frames except for one).

With regard to the final limitation of associating the non-deleted frame data with a position on a map based on the frame's associated position data, Laumeyer suggests that the invention can be used to assist in physical mapping (laumeyer col. 18 lines 10-15), but the reference is not drawn to the specifics of associating the frame data with a map. The Hsu reference, however, is specifically drawn to this subject matter and expressly discloses the limitation of associating non-deleted frame data with a position on a map based on the frame's associated position data (Hsu col. 1 lines 28-39 & col. 3 line 54 – col. 4 line 34). It would have been obvious to one reasonably skilled in the art at the time of the invention to modify laumeyer's image processing method by associating the captured frames with a position on a map as taught by Hsu. Such a modification would have allowed for the laumeyer invention to be applied to the field of physical mapping (laumeyer col. 18 lines 10-15).

With regard to claim 16, Laumeyer discloses a setting means for setting sampling intervals of frame data (col. 5 lines 32-33). Laumeyer discloses a camera with a frame rate. Inherent in any camera with a given frame rate is a

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setting means for setting the frame rate. For any given frame rate (set by a setting means), the sampling interval (distance between captured frames) will vary proportionally with the driving speed. For example, the sampling interval of a capture device with a given frame rate will increase with increased driving speed and decrease with decreased driving speed. As a result, we can conclude that Laumeyer inherently teaches a setting means for setting the sampling interval. Laumeyer further discloses an extraction means which extracts two images (frame data) which have a corresponding location (col. 18 lines 25-29 and Figure 4). Since these locations are equivalent, it follows that the position data distance is shorter than the sampling interval distance.

With regard to claim 26, Laumeyer further discloses a determination means for comparing two pieces of frame data and determining whether or not the two pieces of frame data have been captured at the same position (Figure 4). Figure 4 shows correlating frame data based on location. Correlating frame data based on location as disclosed in Laumeyer qualifies as determining whether or not two pieces of frame data have been captured at the same position as recited in the claim. Laumeyer further discloses extracting the frame data that the determination means determines has been captured at the same position (Figure 4).

Further referring to claim 26, Laumeyer fails to expressly disclose making the above determination by computing a least squares error between two pieces of frame data.

Hsu, however, discloses computing the least squares error between two pieces of frame data (Hsu column 10 lines 5-23). The video frame image and reference frame image discloses in Hsu are analogous to the two pieces of frame data as recited in the claim. It would have been obvious to one reasonably skilled in the art at the time of the invention to modify Laumeyer's image capture location matching system to include that a relative distance between two image frames is computed using a least squares error method as taught by Hsu. Such a modification would have allowed for a system that could match image capture locations that were very similar but not exactly the same. This would have made for a more flexible and robust system.

With regard to claims 1, 5, and 25, Laumeyer discloses an apparatus for performing the method of claims 12, 16, and 26 (see figures 3b and 5).

With regard to claims 23 and 27, a computer-executable program comprising code which causes the computer to execute the steps of a method is inherent in these teachings.

With regard to claims 24 and 28, a storage medium that stores a computer-executable program which causes the computer to execute the steps of a method is inherent in these teachings.

5. Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Laumeyer and Hsu as applied above, and further in view of Hsieh et al. (USPN 6,011,558). The arguments as to the relevance of Laumeyer and Hsu as applied above are incorporated herein.

With regard to claim 15, Laumeyer further discloses that the holding means holds frame data of moving images captured with a plurality of moving capture devices mounted on the moving object (Laumeyer, figs 3a and 3a).

Referring to the step of generating panoramic images from the framed data captured by the plurality of capture devices, Laumeyer discloses capturing frame data with a plurality of capture devices as is discussed above. But

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laumeyer fails to expressly disclose generating panoramic images from the captured image data. Hsieh, however, discloses the limitation of generating panoramic images from captured images (Hsieh col. 2 lines 13-15). It would have been obvious to one reasonably skilled in the art at the time of the invention to modify the image processing method disclosed in the combination of Laumeyer and Hsu by generating a panoramic scene from the captured images as taught by Hsieh. Such a modification would have allowed for utilization of panoramic image maps in a variety of different applications such as movie special effects, virtual reality, games, or any other of a plurality of applications (Hsieh col. 1 lines 22-25).

With regard to claim 4, Laumeyer discloses an apparatus (see figures 3b and 5).

### *Conclusion*

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick L Edwards whose telephone number is (571) 272-7390. The examiner can normally be reached on 8:30am - 5:00pm M-F.

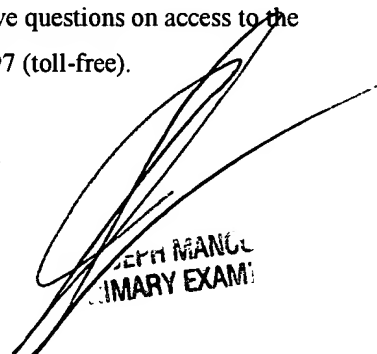
If attempts to contact the examiner are unsuccessful, the examiner's supervisor, Joe Mancuso, can be reached on (571) 272-7695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick L Edwards

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JOSEPH MANCUSO  
PRIMARY EXAMINER